

REMARKS/ARGUMENTS

The Status of the Claims.

Claims 1 to 15 and 17 to 26 are pending with entry of this amendment, claims 16 and 27 to 66 being cancelled herein. Claims 1, 7, 11 and 19 are amended herein. These amendments introduce no new matter and support is replete throughout the specification. These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter or agreement with any objection or rejection of record.

With respect to claim 1, support for an aqueous matrix phase pH between 4 and 9 can be found throughout the specification. For example, see original claim 36, and the specification at paragraphs 22 and 77. Support for matrix cross-linkage without aldehyde cross linking can be found throughout the specification, e.g., in the examples, and in paragraphs 8 and 10. Such negative limitations are specifically provided for in MPEP 2173.05(i) and *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977). Support for protection against removal from the gel can be found throughout the specification, e.g., in the Examples, Figures, and paragraphs 2, 12, 13, 52, 61 and 69.

With respect to claim 7, the amendment is merely a minor grammatical change to comply with antecedence basis rules of claim structure.

With respect to claim 11, no new subject matter was added to the claim.

With respect to claim 19, support for Maillard chemistries can be found throughout the specification. For example, see specification at paragraph 72.

Applicants submit that no new matter has been added to the application by way of the above Amendment. Accordingly, entry of the Amendment is respectfully requested.

The Election/Restriction Requirement.

Pursuant to a restriction requirement made final, Applicants cancel claims 27 to 66 with entry of this amendment. Please note, however, that Applicants reserve the right to file subsequent applications claiming the canceled subject matter and the claim

cancellations should not be construed as abandonment or agreement with the Examiner's position in the Office Action.

The Information Disclosure Statement.

Applicants note with appreciation the Examiner's thorough consideration of the references cited in the Information Disclosure Statements (Form 1449) submitted on December 18, 2003 and April 11, 2006.

Claim Objection

Claim 16 was objected to for alleged failure to further limit composition claim

1. As the claim is presently cancelled, the objection is rendered moot.

35 U.S.C. §112, Second Paragraph.

Claims 1, 7, 11, 16, 19, and 21 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite because of alleged lack of clarity of certain claim terms. Applicants traverse.

With regard to claim 1, the phrase "continuous phase aqueous matrix" is well understood in the art and clearly defined in the original specification. It is not clear from the Action whether the Examiner considers the term "matrix" or "continuous phase aqueous matrix" to be unclear. As a preliminary matter, Applicants believe the conclusory statement in the Office Action (the Action) that "a matrix is a continuous solid phase in which particles are embedded" is too narrow to be considered the generally accepted meaning of the term. For example, a matrix is not so limited - Webster's "matrix" 3b: material in which something is enclosed or embedded. Applicants further clarify that matrices of the invention are not limited to a solid matrices. Because the term "matrix" is so old and well understood, Applicants note that a definition of the term is not required in the specification (see, *CCS Fitness*, 62 USPQ2d 1658). However, the present application goes beyond the requirements of *CCS Fitness* by further defining the terms "matrix" and "continuous phase aqueous matrix" throughout the original specification, e.g., at paragraphs 47, 49, 53, 60, **61**, and 69. To briefly clarify the term, a continuous phase aqueous matrix of the invention is a matrix comprising a continuous water-based phase. Typically, the continuous phase aqueous matrix comprises a gel of cross-linked proteins, and droplets or particles containing lipids are

embedded in the matrix. Because terms are clear based on common usage, use in the art and usage in the specification, Applicants respectfully request withdrawal of the rejection based on section 112, second paragraph.

With regard again to claim 1, the phrase "protected against" is well understood in the art and clearly defined in the original specification. This phrase is in common usage and even those without skill would understand the meaning. For example, lipid droplets in a composite gel are protected against degradation, modification or removal while passing through a rumen, when they pass through a rumen without being degraded, modified or removed from the gel. In contrast, supplemental constituents or lipid droplets introduced to a rumen without incorporation into the gels of the invention are degraded or modified by the conditions of the rumen, as described in the specification. The intended meaning is further clarified with reference to the specification, e.g., in the Examples section, the Figures, and at paragraphs 2, 11-13, 57, 58 and 61. Should the term, e.g., "protected against degradation" remain unclear to the Examiner, Applicants request a more expansive explanation of why these commonly understood terms should be deemed unclear. Because the terms are commonly understood and further clarified in the original specification, Applicants respectfully request withdrawal of the rejection.

With regard again to claim 1, the scope of the term "removal" is unclear to the Office. To further clarify the term, the claim has been amended to specify that protection is against removal of constituents or droplets from the gel during passage through a rumen. Applicants note that the amended claim distinctly identifies protection of supplemental constituents and lipid droplets against removal from the gel during passage through a rumen (i.e., protection against removal from the gel into the rumen space). Applicants respectfully request withdrawal of this rejection.

Claim 7 is rejected for alleged insufficient antecedent basis. Applicants have amended the claim to include the preposition "a", indicating this is the first appearance of the term "filler phase" in the associated claims. Thus, antecedent basis is sufficient and Applicants request withdrawal of the rejection.

Claim 11 is rejected for the alleged redefinition of the term "oil". Applicants have elected to remove the terms found objectionable in the context of the claim. However,

Applicants retain the right to claim embedded particles containing oils in future prosecution of this application. Applicants respectfully request withdrawal of the rejection.

Claim 16 is rejected for alleged indefiniteness concerning conditions of matrix resistance. However, because the claim has been cancelled, the rejection is now moot.

Claim 19 proteins are cross-linked with reducing sugars. The claim has been amended to further clarify that the reducing sugars are reactants in the cross linkage and not mere catalysts, e.g., linking proteins through well known Maillard reaction chemistries. This amendment addresses the issues raised by the Action and Applicants request withdrawal of the rejection.

Claim 21 has been rejected for alleged indefiniteness of the relative term "predominantly". As a preliminary matter, the rejection is based on the premise that a relative term can not be clear and definite. Applicants believe this is incorrect and request a citation of the authority supporting this statement in the action. The term "predominantly" is clear in the claim based on common usage, use in the art and from reading of the specification. Of course, predominantly means "mostly" or more than half. There can be nothing unclear about the objective mathematical quantity of more than half, and Applicants request withdrawal of the rejection.

35 U.S.C. §102.

Claims 1-6, 8, 11-16, 20-23 and 25-26 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by Rawlings et al., US 4,216,234. Applicants traverse.

In order for a reference to anticipate an invention, the reference must teach each and every element of the claimed invention. That is, in order for a reference to anticipate an invention, anticipation requires that "all limitations of the claim are found in the reference, or 'fully met' by it." Kalman v. Kimberly-Clark Corp., 218 USPQ 781, 789 (Fed. Cir. 1983). Here, the claims, as amended, include limitations not found in the Rawlings.

Rawlings describes a lipid encapsulated feed supplement produced by emulsifying a lipid in an aqueous albumin solution at a pH ranging from about 9.6 to about 12.5 and heating to form a gel of lipid globules microencapsulated in albumin (see column 3, line 1). In Examples V and VI, at column 11, the Rawlings process fails to provide a gel from an emulsion at pH 9.4, but succeeds in forming a gel at a pH of 9.6 or more. Rawlings

does not teach preparation of gels at pHs between pH 4 and pH 9, and therefore does not teach all the limitations of the present claims. Rawlings actually teaches away from the present invention, and is thus not appropriate subject matter for an obviousness rejection, as discussed below. Applicants respectfully request withdrawal of the rejection based on alleged anticipation by Rawlings.

Because the independent claim is not anticipated by Rawlings, neither can any of the associated dependent claims. Moreover, with regard to dependent claim 13, the cited reference at column 3, line 14 does not describe the pH adjustment as forming an emulsion, but describes an emulsion step independent of the pH adjustment step. Therefore, Rawlings does not teach the emulsifiers of claim 13. With regard to claim 14, the Action fails to allege, and Rawlings in fact does not teach, hydrocolloids. Therefore the further reasons exist the rejection of claim 14 must be withdrawn.

35 U.S.C. §103(a).

Claims 9-10, 17-19, and 24 were rejected under 35 U.S.C. §103(a) as allegedly obvious based on Rawlings in light of Richardson (US 5,143,737). Applicants traverse.

Richardson describes preparation of a dry composite (not a gel) by emulsifying a lipid into a solution of protein and reducing sugars followed by browning (Maillard reaction) conditions of heating and drying the emulsion in hot air (see, e.g., column 6, line 18).

Three requirements must be met for a *prima facie* case of obviousness. First, the prior art reference must teach all of the limitations of the claims. M.P.E.P. § 2143.03. Second, there must be a motivation to modify the reference or combine the teachings to produce the claimed invention. M.P.E.P. § 2143.01. Third, a reasonable expectation of success is required. M.P.E.P. § 2143.02. The teaching or suggestion to combine and the expectation of success must be both found in the prior art and not based on Applicants' disclosure. M.P.E.P. §2143. That is, a *prima facie* case of obviousness requires that the combination of the cited art, taken with the general knowledge in the field, must provide all of the elements of the claimed invention. When a rejection depends on a combination of prior art references, there must be some teaching, suggestion or motivation to combine the

references. In re Geiger, 815 USPQ2d 1276, 1278 (Fed. Cir. 1987). Moreover, to support an obviousness rejection the cited references must additionally provide a reasonable expectation of success. In re Vaeck, 20 USPQ2d 1438 (Fed. Cir. 1991), citing In re Dow Chemical Co., 5 USPQ2d 1529, 1531 (Fed. Cir. 1988).

Richardson does not provide the claim 1 limitations not found in the Rawlings primary reference, as described above. That is, for example, Richardson does not teach a composite gel having a continuous phase aqueous matrix of cross linked proteins at a pH between pH 4 and 9. Because the combination of Rawlings and Richardson does not teach all the limitations of the claims, they can not be rendered obvious and the rejections must be withdrawn.

Further, with regard to claims 9 and 10, the Action acknowledges that Richardson does not teach conjugated linoleic acid. The Action at page 9 appears to imply that conjugated linoleic acid is inherent in Richardson because whey protein is used in the aqueous emulsions. However, whey protein does not necessarily include linoleic acid or conjugated linoleic acid. In fact the whey proteins and whey protein concentrates used in the references specifically do NOT include any milk fats (which are processed out of these commercially available products). The cited references do not teach any of the several limitations found in claims 9 and 10, so the rejections must be withdrawn.

Assuming *arguendo* that the combination of references could provide all limitations of the claims (which they in fact do not), the combination would be unmotivated and therefore non-obvious. There is no suggestion in either cited reference to make the combination suggested in the Action. Further, the combination is unmotivated because the proposed modification of Rawlings would change the principle of operation, so the teachings of the Richardson are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). For example, application of the Richardson drying and browning technique to Rawlings would require a substantial reconstruction and redesign of the elements shown in Rawlings as well as a change in the basic principle under which the Rawlings construction was designed to operate. Moreover, application of Richardson to Rawlings would actually result in a product that is not a gel, at issue in the present claims. Furthermore the combination is not obvious because the drying steps necessary to the

Appl. No. 10/620,315
Response Dated January 17, 2007
Reply to Office Action of October 20, 2006

browning in Richardson's technology teaches away from the claimed invention. See, *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). Because the cited combination is not motivated, for a variety of reasons, it can not be considered obvious.

Finally, the combination can not be considered obvious because there would be no expectation of success. The drying and browning of Richardson can not possibly succeed in providing the claimed aqueous gel.

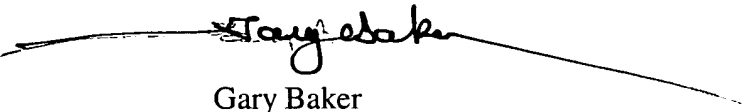
CONCLUSION

In view of the foregoing, Applicants believes all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the claims are deemed not to be in condition for allowance after consideration of this Response, a telephone interview with the Examiner is hereby requested. Please telephone the undersigned at (510) 769-3510 to schedule an interview.

QUINE INTELLECTUAL PROPERTY LAW GROUP
P.O. BOX 458, Alameda, CA 94501
Tel: 510 769-3510
Fax: 510 337-7877
PTO Customer No.: **22798**
Deposit Account No.: **50-0893**

Respectfully submitted,



Gary Baker
Reg. No: 41,595

Attachments:

- 1) A transmittal sheet; and,
- 2) A receipt indication postcard.